BE CURIOUS
College of Science Seeks ‘Society’s Next Big Solutions’
CRUCIBLE OF CURIOSITY

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At A&M’s Center for Biological Clocks Research, neurobiologist Mark Zoran focuses on circadian (24-hour) regulation of neural cell communication. Graduate and undergraduate research in areas such as biological clocks prepares students for emerging career opportunities in health, business and public service.
It all started in 1876 with five faculty, including three who were mathematicians or chemists.

Since that birth of the Agricultural and Mechanical College of Texas, the curriculum, culture and institutional identity of Texas A&M University have had at their core a sense of curiosity and a mission of discovery through science. From the early School of Arts and Sciences, the Texas A&M College of Science emerged as a stand-alone unit in 1966, three years after the AMC’s elevation to university status. Thus, science, along with liberal arts, has been the bedrock of what defines our academic institution from day one.

The College of Science features five academic departments (biology, chemistry, mathematics, physics and astronomy, and statistics), one jointly administered academic department (materials science and engineering) and 20 Texas A&M University System Board of Regents-approved centers and institutes, along with many specialized laboratories and active research groups. The college’s faculty, now 360 strong, includes one Nobel laureate and five National Academy of Sciences members among its many internationally recognized standouts in teaching and research. Individually and collectively, they excel at providing unique learning experiences and fundamental science education while focusing on innovation and discovery to the tune of more than $60 million in annual research funding.

But beyond the facts and figures lies one core story of curiosity, embodied in the persistent pursuit of new knowledge, while educating an Aggie community in the natural sciences.
Driven To Discover

“Be Curious” is the motto of the College of Science, acknowledging that wonderment and fascination with the nature of things are the catalyst to discovery. In tandem with the university’s own “Fearless on Every Front” slogan, these describe well the overarching philosophy of scientific education, research and service at Texas A&M. The college’s faculty members harness their interests and passions to better understand the world, enhance the health and sustainability of society, and innovate and promote science, technology, engineering and math (STEM) education in Texas and beyond.

“The College of Science is well positioned to find society’s next big solutions, thanks to abundant expertise in both fundamental and applied educational, research and service excellence,” said Texas A&M statistician Valen E. Johnson, who was appointed as dean of the college in May. “Our faculty, students and research staff recognize that tomorrow’s answers are by-products of today’s questions—complex puzzles that require an increasingly interdisciplinary, multifaceted approach for optimum results.”

Fueled by the concept that the key purpose of higher education is to produce two deliverables—discoveries and the people who make those discoveries—the College of Science endeavors to position its nearly 4,000 students for academic success, offering 32 undergraduate degree programs and 16 graduate degree options.

Many of the college’s basic research advances become vital investigative tools benefiting Texas A&M faculty, students and programs that span both internal and external constituencies and causes. On any given day, research is underway in myriad areas—data-driven science, biological advances in plant and human health, drug development, quantum science and much more.

**BY THE NUMBERS**

1 Nobel Prize recipient
1st in nation for online master’s programs in statistics
2 National Academy of Sciences members elected in 2017
1st SEC Professor of the Year from A&M
7th in nation in nuclear physics graduate programs

Researchers from across the campus can visualize large datasets in the Immersive Visualization Center within the Texas A&M Institute for Scientific Computation.
Supporting Student Success

As one of the university’s primary service teaching colleges, the College of Science provides the mathematics, statistics and natural science foundations for all Texas A&M majors. It teaches more than 280,000 semester credit hours during an academic year, including 190,000 in gateway courses. About 80 percent of the college’s teaching mission is dedicated to educating undergraduate students who are seeking degrees in other colleges, further illustrating the faculty’s foundational impact.

“Considering the fact that virtually every Texas A&M student will take a class in the College of Science at some point during their collegiate careers, our academic programs offer huge leverage for transformational education for all Texas A&M students,” Johnson said. “In many cases, our classrooms will be their last formal encounter with these subjects. Therefore, it’s vitally important that we encourage lifelong learning and appreciation for science by educating citizen scientists with critical thinking skills and the confidence to apply them, regardless of what fields they eventually choose to pursue.”

When it comes to its own majors, the college offers many incentives, including customized advising, four honors programs and dedicated peer mentoring as part of RetainU, launched in fall 2017 to support all

Top: A&M’s inorganic chemistry program is ranked fifth in the U.S. Bottom: The colorful Chemistry Road Show travels 12,000 miles a year bringing science to 20,000 participants across Texas.

**7th** among public graduate programs in statistics
U.S. News & World Report

**10th** among public chemistry graduate programs and 24th overall
U.S. News & World Report

**9th** among public math institutions and 16th nationally; **21st** among public math graduate schools
Shanghai Rankings and U.S. News & World Report

**53%** of undergraduates are female

**28%** of undergraduates are first-generation students

**47%** of undergraduates are male

**92%** of Texas A&M Biology undergraduates finish in four years or less
first-year science students while improving student retention and graduation rates. Another retention program, Science Leadership Scholars, targets high-performing science majors who share common risk factors, including being first-generation students from low-income families. Scholars are twice as likely to graduate in four years with a STEM degree as students from similar backgrounds who do not participate in SLS.

In recent years, Texas A&M Science has created an undergraduate degree in statistics, a master’s degree in quantitative finance and a Ph.D. in astronomy. New undergraduate specializations in cryptography, data analysis, bioinformatics and neuroscience also have been launched.

The college is developing an interdisciplinary bachelor’s degree in science that will benefit majors interested in emerging career opportunities in the broadening STEM workforce of the future. As early as next fall, Science will unveil a new two-course core science option called Contemporary Issues in Science, which explores the fundamental science behind trending topics, from human cloning and genetic engineering to climate change and radiometric dating of fossils.

Educational Outreach And Engagement

Beyond its important service teaching role, the College of Science has a well-established foothold in fostering the scientific curiosity of future Aggies and the population at large. The college’s multipronged approach to community outreach includes K-12 programs, nationally recognized teacher preparation and training, and countless college- and department-based exhibitions that showcase science in surrounding communities.

“Our award-winning Chemistry Open House and Chemistry Road Show, Physics and Engineering Festival, and Mathematics and Statistics Fair attract thousands each year and are equally valuable educational experiences for participants as well as the students, faculty and staff involved,” Johnson said.

In Johnson’s view and that of many Aggie traditionalists, some things never change. Whether 1876 or 2019, it all starts and ends with the faculty as the foundation for success in any aspect and a commitment that transcends campus borders—inspiring curiosity and enthusiasm for science in the next generation of Aggies, research scientists, STEM educators and global citizens.
DID YOU KNOW?

**CHEMISTRY**
recently has undergone a substantial facility upgrade, adding multiple mass spectrometers while renovating its X-Ray Diffraction Laboratory to enhance the identification and characterization of molecules.
Read more at tx.ag/CHEMfacilities.

**SPINAL CORD INJURY**
breakthroughs are on the horizon, thanks to a Texas A&M and The Institute for Rehabilitation and Research Foundation partnership that brought four new professors to campus. Two of them, biologists Dylan McCreedy and Jennifer Dulin ’05, are investigating key cellular and molecular mechanisms behind improving long-term SCI recovery.
Read more at tx.ag/SCIresearch.

**A&M PHYSICISTS**
have developed custom-made patent-pending teaching laboratory tables to help illustrate the basic principles of physics that are in use in the Zachry Engineering Education Complex and at Texas A&M’s locations in Qatar and McAllen.
Read more at tx.ag/PHYSTeachingLabs.

**BIOLOGY**
is home to the largest undergraduate research program on campus, in addition to three of the top eight Texas A&M majors most accepted to medical school.
Read more at tx.ag/BIOldegrees.

**BOTH MATHEMATICS AND STATISTICS**
offer combined bachelor’s and master’s fast-track degree programs for qualified high-achieving students.
Learn more at tx.ag/CLSCFastTrack.